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Meeting Title: Brief on Individual Plaintiff Exams
Generic Letter

Meeting Date: 8/5/88 Open X Closed _____

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UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON INDIVIDUAL PLANT EXAMINATIONS GENERIC LETTER

Location: ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

Date: FRIDAY, AUGUST 5, 1988

Pages: 1-63

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Court Reporters

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3 ***

4 BRIEFING ON INDIVIDUAL PLANT EXAMINATIONS GENERIC LETTER

5 ***

6 PUBLIC MEETING

7 ***

8 Nuclear Regulatory Commission
9 One White Flint North
10 Rockville, Maryland

11
12 FRIDAY, AUGUST 5, 1988
13

14 The Commission met in open session, pursuant to
15 notice, at 2:00 p.m., the Honorable LANDO W. ZECH, Chairman of
16 the Commission, presiding.

17 COMMISSIONERS PRESENT:

18 LANDO W. ZECH, Chairman of the Commission
19 THOMAS M. ROBERTS, Member of the Commission
20 KENNETH M. CARR, Member of the Commission
21 KENNETH C. ROGERS, Member of the Commission
22
23
24
25

1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 S. CHILK

3 W. PARLER

4 V. STELLO

5 E. BECKJORD

6 T. SPEIS

7 B. SHERON

8 T. MURLEY

9 F. EETAIWILA

10 J. MURPHY

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P R O C E E D I N G S

[2:00 p.m.]

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen.

This afternoon the Commission will be briefed by the Nuclear Regulatory Commission's Office of Research on a generic letter requiring each nuclear power plant licensee to perform an individual plant examination which we will refer to during the course of the afternoon as IPE.

As part of the implementation of the Commission's severe accident policy, the Commission issued a policy statement on severe accidents which included a statement that based on available information, existing plants posed no undue risk to the public health and safety. The Commission felt however that an individual plant examination for risk outliers would further aid in the reduction of any risks posed by severe accidents.

Issuance of this generic letter is an important step in reaching closure on severe accident issues for currently operating plants. The Commission and the nuclear industry have been working on this issue of severe accidents for the past several years and we are approaching the resolution of this important issue.

I'm particularly interested in hearing how the staff will assess the adequacy of the IPE submittals and the approach the staff will take in developing a framework for accident

1 management programs.

2 Would any of my fellow Commissioners have any opening
3 comments they'd like to make?

4 [No Response.]

5 CHAIRMAN ZECH: If not, Mr. Stello, you may proceed.

6 MR. STELLO: Well, thank you, Mr. Chairman. This is
7 a very, very important subject, one which is a very key step in
8 finally getting to the point where we have reached what we
9 refer to as closure on severe accidents.

10 We presented to you in SECY-88-147 our entire program
11 to achieve that objective. This is one very important key part
12 of it. It is not a part for which there is not controversy and
13 I'll get into that in a few minutes to talk about the letter
14 that you received from the ACRS specifically.

15 Before I do, I think it's important to note that the
16 Commission when it issued its severe accident policy statement,
17 concluded that plants were safe.

18 We have reported to the Commission that even since
19 that policy statement was issued we have made in our judgment
20 what we think is significant progress in advancing further the
21 safety of the operating plants so that I feel very comfortable
22 today in being able to say that the plants today are even safer
23 than they were at the time the Commission issued that policy
24 statement provided the data that we have been collecting over
25 the years now -- the last three years. We showed the

1 Commission those data at a meeting some months ago -- what we
2 have been to quantify -- the trends are clearly there in
3 improved safety.

4 There remains the task to finally bring to closure
5 the severe accident issue. What we have before the Commission
6 today is the IPE program and a letter to initiate that program.
7 We reviewed this a number of times with the ACRS and they have
8 some differences. We have accommodated those differences to
9 the extent we were able to but there are still some differences
10 between what the ACRS has advocated and what we think are
11 appropriate to do at this time.

12 We will during the briefing identify those areas and
13 tell you why we think we ought to go forward in a way that is
14 different than the ACRS proposed.

15 A couple of the key points I would at least mention
16 up front is one where the ACRS has suggested doing all of the
17 job at one time -- doing all of the USIs, GSIs, external
18 events, accident management -- encompassing all of that at one
19 time and doing it in one step.

20 That's certainly a possible way to go but it would
21 substantially, significantly delay achieving the objective
22 which we have in mind of closing out this issue. It would just
23 take an awful lot longer to be able to do that. We don't think
24 that is a good idea.

25 During the briefing, we'll go into the specific

1 comments and provide you with a detailed rationale of why we
2 think it is proper for us to move forward and urge the
3 Commission that you in fact endorse moving forward.

4 We have discussed on a number of occasions this
5 program with the industry. The industry has met with the ACRS
6 and during those meetings, the industry has in fact indicated
7 that they are now comfortable with the program. In fact, there
8 are at least two utilities -- Pennsylvania Power and Light and
9 Commonwealth Edison -- that have already initiated implementing
10 the IPE program because I guess they feel comfortable that's
11 the proper thing to do and have waited.

12 I'm firmly convinced that it's time for the industry
13 to start the IPE program. There are two points that have come
14 up in the past and that are worth mentioning up front. One,
15 should we in fact require each of the utilities to do a PRA.
16 We think that it would not be wise to do that now because we
17 have so much invested in energy review time in the IPE program
18 and have gotten that to where we are ready to move forward.

19 It is certainly a possible issue, one which the ACRS
20 raised and one can discuss this further but I think the net
21 result is again, we would delay making progress if we take that
22 course. Some utilities of course may elect to do that and if
23 they do, that's fine. We in fact encourage it.

24 COMMISSIONER ROBERTS: Do you think that is a
25 practical result that all will?

1 MR. STELLO: I don't believe all of them will. I
2 believe some of them will. If you recall, you asked Dr. Murley
3 to do a survey indicating interest in how many might want to do
4 that and I believe -- is Dr. Murley -- Tom -- I think you might
5 want to report what you found when you made the surveys on how
6 many utilities might in fact be interested.

7 MR. MURLEY: I don't recall that we made that
8 particular survey. We asked how many are doing PRAs now and I
9 don't have even that number but my guess is it's probably going
10 to be close to 50-50. About half will do PRAs and half -- I
11 know have already started on IPES.

12 MR. STELLO: There are about 36 already performed?
13 PRAs?

14 MR. BECKJORD: Commonwealth Edison is doing both at a
15 couple of plants.

16 CHAIRMAN ZECH: But as far as the ISAP program itself
17 -- that requires a PRA; isn't that right?

18 MR. STELLO: That's correct and I think that was the
19 specific survey Mr. Murley --

20 MR. MURLEY: That was the survey we did, yes, that
21 was the one.

22 CHAIRMAN ZECH: When you talked about that the
23 survey, that was the one I recalled.

24 MR. STELLO: That's the one I had in mind that I
25 think the interest was not very high. There were several that

1 indicated they would do the PRA and want to go into the ISAP
2 program; is that correct?

3 MR. MURLEY: Yes.

4 MR. STELLO: Okay. As I recall -- let me see --
5 okay, let me use the words we used. Currently there is a
6 relatively low level of interest expressed by the licensees in
7 ISAP. However, the staff will arrange to combine IPE and ISAP
8 reviews when requested consistent with available resources is
9 what we told the Commission.

10 CHAIRMAN ZECH: As I recall, the last time when we
11 talked about this at the Commission meeting there was some
12 concern that there did seem to be at least amongst some
13 utilities, not much interest in doing the ISAP. I know that
14 Northeast Utilities has always been interested in it and other
15 companies too but I thought we had -- I thought that is what
16 the survey was going to try to find out as to whether or not
17 there was interest in doing the ISAP program which would
18 include PRA.

19 MR. STELLO: And the answer was relatively few.

20 MR. MURLEY: Relatively few. Since that time to be
21 quite blunt, our interest has gone down because we just don't
22 have the resources and NRR to undertake it so we have not
23 followed it very actively in the last few months since we did
24 that survey, partly because of the lack of interest but mostly
25 because I just couldn't find the resources if I had to.

1 CHAIRMAN ZECH: But is it true that -- is that
2 statement still true that you believe there is still somewhat
3 of a lack of interest on the part of utilities to do the ISAP
4 which would include the PRA?

5 MR. MURLEY: Well, they are separate issues. The
6 benefit of the ISAP we had proposed to them was that this is a
7 logical systematic way of dealing with licensing issues and it
8 was supposed to be more attractive to those utilities that had
9 older plants with a lot of issues on their plates.

10 I think we received enough interest that we could
11 have gone forward with a pilot program like at least a dozen
12 utilities and plants were interested and they were quite
13 willing to do PRAs, in fact, many of them had done so.

14 There are a number of the plants who are doing PRAs
15 who are not interested in ISAP. They are doing PRAs just for
16 the better understanding that it gives their plant.

17 I don't know if I have really answered your question
18 but to some extent the desire to do a PRA is independent of the
19 desire to join ISAP although it is true to do ISAP you have to
20 have a PRA.

21 CHAIRMAN ZECH: All right. Let's proceed.

22 MR. STELLO: I think we are going to probably want to
23 get back into that issue during the briefing itself later so I
24 won't say more than that about it and I've taken more time than
25 I've planned at the moment so let me ask Eric Beckjord who is

1 going to say a few words and then we'll turn to Dr. Speis.

2 CHAIRMAN ZECH: All right. Thank you very much. You
3 may proceed, Mr. Beckjord.

4 MR. BECKJORD: Mr. Chairman, when the Commission
5 approved the severe accident policy statement in 1985, it
6 directed the staff to work with industry and develop a method
7 for performing plant specific examinations called for in the
8 policy.

9 We've worked with the industry through the IDCOR IPE
10 committee for the past three years and carried out the
11 Commission's direction. The IPEM method will accomplish the
12 intended purpose of disseminating severe accident vulnerabilities
13 provided that it is augmented in a number of areas especially
14 in the area of containment performance and also provided that
15 it is performed properly.

16 If the Commission approves the IPE, we will review
17 the licensee IPEs when they are completed to assure that they
18 meet the required quality. The IPEM has several advantages.
19 First, it is user friendly and by that I mean that the plant
20 personnel can contribute extensively to the actual work of
21 doing the IPE.

22 The more the contribution on the part of plant
23 personnel, the more likely it will be that effective follow-up
24 action will be taken. Secondly, the IPEM can be expanded at a
25 later date if need be into a full PRA.

1 This could be desirable for example, in the event
2 that a PRA were required in some connection such as a licensed
3 extension application. There is the question of the PRA as a
4 more complete analysis and there's really no question about it,
5 the PRA is more thorough. Should not then the Commission now
6 require a complete PRA?

7 There are advantages to either approach -- the IP
8 or the PRA. In my view, the ability for plant personnel
9 contributing to the job is a very important consideration. For
10 this reason, I think that there are different answers to the
11 question of which method is best for a particular plant.

12 For those that have done or who are doing a PRA, the
13 answer is clear. It's a PRA. For those who have not yet
14 begun, the PRA may be preferable in cases where the plant staff
15 has a background in the PRA method. For others with less
16 background in PRA, the IP approach may be preferable.

17 In other words, what I propose is to leave the option
18 open as it is suggested in the generic letter. What is most
19 important in my view is to get the job underway and complete at
20 the earliest practicable date. If there are vulnerabilities
21 uncovered, then corrective action can be undertaken promptly.

22 CHAIRMAN ZECH: Thank you. Let's proceed. Dr.
23 Speis?

24 MR. SPEIS: Thank you very much, Mr. Chairman. As
25 Mr. Stello said, the individual plant examination is a key

1 component of the severe accident program. If I may quote from
2 the integration plan for closure of severe accident, as SECY
3 88-147 said, "Severe accident closure is achieved once the
4 IPE's have been completed and any appropriate changes
5 implemented."

6 The framework for an accident management program has
7 been developed and implemented and we'll talk about what that
8 means and No. 3, generic requirements resulting from the
9 containment performance improvement program have been
10 implemented. We have already briefed the Commission on the
11 status of the Containment Performance Improvement Program on
12 July 22, starting with the MARK-I's.

13 Today of course we'll talk about the IPE program
14 itself and early in the Fall we will be talking to you in more
15 detail about the accident management program. Today we will
16 discuss the accident management program to the extent that it
17 relates to the IPE effort.

18 If you go the first viewgraph, I have a briefing
19 outline there. You see we have quite a few things to cover.

20 [Slide.]

21 MR. SPEIS: We discuss where we came from, discuss
22 the examination process, summarize the process and the
23 objectives of the examination itself, say something about the
24 analytical methods, discuss the IPER and the PRA and the pluses
25 and minuses, say something about the benefits of a PRA, address

1 explicitly the issue of external events -- why we requiring
2 licenses at this time to address only internal events, again
3 discuss the role of accident management -- how is accident
4 management addressed the proposed generic letter, discuss the
5 relationship of unresolved safety issues and generic issues to
6 this total effort, and again explicitly address each of the
7 ACRS comments in their last two letters to you, Mr. Chairman,
8 and finally discuss how we are going to review the IPE results
9 and what use we plan to make of them in the presentation with
10 our conclusions.

11 [Slide.]

12 MR. SPEIS: If you go to Viewgraph No. 2, we have
13 summarized a number of things that bring you up to speed on
14 what has gone on. As the previous speakers have indicated, we
15 have developed the generic letter to the industry to implement
16 the severe accident policy for operating reactors. We
17 completed the review of the IDCOR methods for conducting the
18 individual plant examinations. We have interacted extensively
19 with the ACRS during the development of the generic letter and
20 during the staff's review of the IDCOR methods. In fact a
21 number of times, which I'll address later on, we have -- a
22 generic letter has been extensively reviewed by the Committee
23 for the Review of Generic Requirements and the letter itself
24 incorporates a number of suggestions made by both the ACRS and
25 the CRGR.

1 [Slide.]

2 MR. SPEIS: On the next page, continuing with the
3 summary, we have expended substantial efforts in developing the
4 generic letter and the supporting documents and we believe that
5 the utilities, as Mr. Stello said earlier, can proceed to
6 perform the IPE's and to further enhance safety where
7 appropriate.

8 Explicitly on the basis of our discussions with the
9 ACRS and also a number of discussions that have taken place
10 between us and the industry over the last 3 years on the
11 issues, on the technical issues associated with severe
12 accidents, the industry has a pretty good understanding of what
13 the letter is all about, what the objectives of the IPE's are
14 and we feel that they are ready to proceed even though they
15 haven't seen the letter itself -- but enough discussions have
16 taken place between us and the ACRS that it should be obvious
17 by now.

18 In fact on July 11, 1988 NUMARC sent a letter to the
19 Chairman of the ACRS reiterating the industry position that
20 they are ready to proceed on IPE's as proposed by the staff.

21 We plan to periodically inform the ACRS, the CRGR and
22 of course the Commission on the progress of this task.

23 [Slide.]

24 MR. SPEIS: I have listed a number explicit meetings
25 that we had with the ACRS. As you see on page 4, we had about

1 4 full committee meetings and 6 subcommittee meetings dealing
2 with this issue so I don't think we have to go any farther.

3 Continuing with the Background, page 5, the basis for
4 requesting the individual plant examinations is of course the
5 Commission's severe accident policy, which was issued in August
6 of 1985. Again, in the statement itself it was said that plant
7 specific PRA's from previous experience had exposed plant-
8 specific, unique vulnerabilities to severe accidents which were
9 always taken care of and in most instances with minor design or
10 operational modifications.

11 Also the statement said that analysis will be made of
12 any plant that has not yet undergone an appropriate examination
13 when NRC and industry sufficiently has progressed to the point
14 to define the methods of analysis, which of course we have
15 done.

16 [Slide.]

17 MR. SPEIS: The purpose of the IPE is for the
18 utilities to identify and understand the most likely severe
19 accident sequences that could occur at their plants and proceed
20 to evaluate and implement means for making improvements and the
21 key point of this is to develop an awareness for severe
22 accident behavior even though, as Mr. Stello said, we think
23 plants are safer and the front line of defense is to prevent
24 accidents, people should be aware that even though they have a
25 low probability they can happen, maybe not in our generation

1 but it is very important to be aware, develop an awareness,
2 especially of the inherent margins that exist in a plant.

3 We have said to you many times in the past that even
4 though those plants have been designed for design basis events,
5 for LOCA's, for steam line breaks, the containments have
6 substantial margins and it is important to understand those
7 margins and put them to use in case events take place that go
8 beyond the design basis. I think that is a key when we are
9 entering the severe accident area, to understand those margins
10 not only in the containment but you have many systems in the
11 plants that can add many, many more hours of cooling into your
12 core if they are recognized and if arrangements have been made
13 prior to make use of those systems. That is of course the
14 heart of accident management and I think that is the heart of
15 the severe accident area that we are trying to enter now.

16 [Slide.]

17 MR. SPEIS: Continuing with the examination process,
18 we are saying in the letter that the licensee's staff should
19 participate in all aspects of the IPE so that the knowledge
20 gained becomes an integral part of their operating, training,
21 and procedural program. We think that is a crucial aspect of
22 it, that the licensees themselves participate in the process.
23 We don't know how to make it stronger when from our
24 discussions with the utilities we think that in most instances
25 it will happen.

1 Licensees should conduct systematic examination of
2 plant design, operation, maintenance and emergency operation to
3 again identify plant-specific vulnerabilities. As I said
4 already, we are talking about areas that improve both
5 preventing core damage and also improving containment
6 performance. Even though the letter and the policy does not
7 exclude external events, we are saying that external events
8 should be considered later on and we will discuss our reasons
9 later on more explicitly.

10 [Slide.]

11 MR. SPEIS: Continuing with the examination of
12 process, again the understanding of what could go wrong in the
13 plant and understanding whether the important sequences that
14 contribute the most to the total core damage and to poor
15 containment performance, these are very key objectives and the
16 identification the evaluation of means to proceed with
17 improvements.

18 The utilities of course will decide what improvements
19 merit further consideration and we the staff upon further
20 review of the IPE's, which we'll discuss later on, if we think
21 there is reason to proceed further then we'll do it according
22 to the Commission's rules and regulations.

23 Dr. Sheron will proceed to continue with the methods
24 of analysis.

25 [Slide.]

1 MR. SHERON: On slide 9 you'll see that the generic
2 letter allows the use of three different methods of analysis.
3 The first one indicated is the IDCOR IPEM, Individual Plant
4 Evaluation Method, which we found to be acceptable provided
5 that it incorporates the staff enhancements that were
6 identified during our review and of course if it they also
7 perform the containment analysis over the back end of it
8 consistent with the guidance in Appendix 1 of the generic
9 letter.

10 We also obviously will allow a utility to submit a
11 Level I PRA, again with containment performance analysis that
12 is consistent with Appendix 1 or they could submit a Level II
13 or a Level III PRA, again provided the containment performance
14 analysis considers the guidance in Appendix 1 of the generic
15 letter.

16 [Slide.]

17 MR. SHERON: Lastly, so we would not preclude a
18 utility from using any other method that might be available, if
19 there was another systematic evaluation proposed, we would
20 allow that. Again we might want to review it first to make
21 sure that we wouldn't reject it once it was submitted.

22 On page 10 you'll see that we have looked at what
23 some of the benefits of a PRA are versus an IPEM. One which I
24 believe Eric mentioned was license renewals. Right now, as you
25 know, we are in the process of developing regulations for

1 license renewal. One of the considerations is should we or
2 should we not require a PRA to be submitted as part of the
3 renewal application that a utility would submit.

4 We have looked and we said a PRA could be a basis for
5 identifying the risk-significant components in a plant which in
6 turn would tell us which ones might be susceptible to the aging
7 process and therefore which we should emphasize should be
8 maintained at an acceptable level during the renewal period.

9 Risk management is another key area that a PRA is
10 very useful. There are some plants that either are or could
11 use a PRA more as a living document to continually assess the
12 risk of the plant to determine whether when they take systems
13 out of service how that changes the risk from a plant and
14 having a PRA done for the IPE they could then easily use it as
15 a living PRA, keeping it up to date and utilizing it on a daily
16 basis.

17 Support for licensing actions: A PRA might be used
18 to justify emergency tech spec changes or other kind of changes
19 to the plant if they could show that these changes don't
20 substantially increase the risk and then, as you heard before,
21 the ISAP, the Integrated Safety Assessment Program to optimize
22 total safety.

23 [Slide.]

24 MR. SHERON: On page 11, as you heard before, we did
25 not at this time ask the industry to include external events in

1 their IPE and we said that their analyses need only go forward
2 with internal initiators.

3 One of the reasons is that we want to work with
4 NUMARC for one to develop an acceptable way or methodology for
5 handling the external initiators. The other is that there are
6 a number of programs under way right now within the Commission
7 that deal with external events. These are, for example, the A-
8 46 USI, the seismic design margin program, the Eastern
9 seismicity program.

10 One thing that we are very concerned about is that
11 whatever these programs ultimately require of a utility
12 primarily in the area of, say, a plant walkdown, we want to
13 make sure that if the utility has to do a walkdown of their
14 plant they do it only one time, and not four times or three
15 times as each of these programs -- so we want to integrate
16 these programs so that whatever we are going require this
17 industry to do in the area of, say, seismic, we do it in an
18 integrated fashion.

19 CHAIRMAN ZECH: As I recall, ACRS has suggested that
20 you consider these external events at the same time you
21 consider the internal initiators. Have you discussed this with
22 the ACRS and what kind of resolution have you come to?

23 MR. SHERON: We discussed it with the ACRS and we
24 explained to them why we did not feel it was appropriate to
25 proceed with external initiators at this time.

1 [Slide.]

2 MR. SHERON: If you'd look on page 12, you'll see
3 what our reasons basically are. One is that right now there
4 are some plants that have done external event PRA's. These are
5 quite extensive, quite costly and also in some areas they are
6 very conservative because of the methods.

7 What we have done in the past is we have started a
8 program -- or we had started a program at Lawrence Livermore
9 which looked into external events from the standpoint of how
10 should external events be treated in the context of the IPE?

11 What we found is that there are some external events
12 that need to be looked at by all plants. They do have a
13 potential for producing risk outliers and therefore should be
14 looked at. We also found that there are some external events
15 that are unique only to a few plants and therefore we would
16 certainly not want to require all plants to have to look at
17 these type of external initiators if they are only applicable
18 to a few plants.

19 There are some external events that may be treated
20 acceptably by the existing design basis. The level, for
21 example, of a flood might, in fact, in probability space be
22 sufficiently low that we would find it acceptable from a
23 vulnerability standpoint.

24 And then lastly, we want to make sure that we have
25 the most appropriate way to identify external event

1 vulnerabilities, and this may not be with a PRA approach.
2 Seismic is the principal concern. The Staff has been working
3 in this area, and what we're finding out is that approaching it
4 from a seismic margins type of approach, where you don't get an
5 absolute number, a PRA type of number of risk, but rather you
6 gain an assurance that the plant is adequately protected
7 against seismic vulnerabilities, and we think this may be a
8 preferable way to go in examining the plant, is to look for a
9 margins type of approach.

10 The industry, in their work in developing their IPEM,
11 did not consider external events, so they are certainly not
12 prepared at this time.

13 We have discussed it with the industry, and they are
14 very willing to work with us in developing an acceptable
15 methodology, so that when we do look at the plants for external
16 event initiators, that the method that we use is going to best
17 utilize the industry resources. We're not going to be asking
18 them to go off and look in areas and spend a lot of time in
19 areas that aren't fruitful.

20 CHAIRMAN ZECH: Does the ACRS agree with you?

21 MR. SHERON: No, they don't.

22 CHAIRMAN ZECH: Okay.

23 MR. STELLO: I think the ACRS, the way I've read the
24 letter and reacted to it is, they are looking to try to solve
25 everything at one time, which would mean get all these USIs,

1 get those integrated and solved, and some of these, as you've
2 heard, are necessary to deal with the external events. I think
3 their view was to take another few years, work all those out,
4 and do it one time.

5 We don't think that that's the right way to go, and I
6 think it's in that context in which there's more disagreement
7 than necessarily specifically here. But without the ACRS here
8 to ask the question, I don't think --

9 CHAIRMAN ZECH: No, but I was interested in your
10 efforts to resolve it. Apparently you have tried to resolve
11 it. You've explained your position to them, and they maintain
12 their original position, I guess; is that right?

13 MR. STELLO: The best I can understand it, the answer
14 is yes.

15 MR. SPIES: I don't think it's that rigid. One of
16 their concerns is duplication of resources, and we will be
17 making known to the industry that this effort will come
18 eventually, external events. Of course, we don't know how
19 extensive and what external events we'll be asked to look and
20 so on and so forth, but we will let them know that since this
21 effort will be coming, be aware that the information that you
22 collect dealing with internal events might be saved and might
23 be utilized for external events to the extent that it can be
24 utilized.

25 CHAIRMAN ZECH: Your approach is that external events

1 will be solved in the future, but not as part of this package.

2 MR. SPIES: That's right.

3 CHAIRMAN ZECH: And the ACRS apparently wants it
4 solved as part of the package at the present time.

5 MR. SPIES: And we're telling them that --

6 CHAIRMAN ZECH: Your view is that you'll solve it
7 later on. You recognize the importance of it, but you're
8 trying to move ahead and get some action taken now and then
9 solve that in the future; is that about right?

10 MR. SPIES: Well, we're telling them it will be
11 decided in the future exactly how to approach what events at
12 what plants, but we're telling them right now that this is
13 coming down the pike, okay. You will have to do it; therefore,
14 when you conduct your individual plant examination for internal
15 events, be sure that you retain the information that could be
16 relevant for external events, okay. That's what we're telling
17 them.

18 CHAIRMAN ZECH: Mr. Stello, what is your objection to
19 the ACRS approach? Trying to do it all at the same time?

20 MR. STELLO: We'd just have to delay things several
21 more years before we could get anything done, and I don't
22 believe that's the right way to proceed. We would essentially
23 have to go back to the drawing board, take several more years
24 before we could deal with this issue. We've worked too hard
25 too long to get this far.

1 CHAIRMAN ZECH: So you're trying to take one bite and
2 move one step ahead rather than waiting longer; is that the
3 idea?

4 MR. BECKJORD: Mr. Chairman, there's another point,
5 Dr. Sheron's point, about the seismic margins approach. I
6 think the biggest part of the external events is going to be
7 seismicity, seismic events, and if the seismic margins approach
8 is the one that is selected, and it seems very likely today
9 that that will, in fact, be the case, then there will be no
10 duplication of these two methods.

11 If the PRA goes ahead now as proposed, and later we
12 come along with the external events using the seismic margins
13 approach, that's a different method, and it gets an answer by a
14 different means. And so that way, there would be -- in that
15 event, there would be no duplication.

16 CHAIRMAN ZECH: All right. Let's proceed.

17 [Slide.]

18 MR. SHERON: Well, just to summarize, I think the
19 real object here is that when we do ask the industry to look at
20 external events, we want to make sure they do it in the most
21 efficient manner possible and don't spend a lot of time using
22 exotic PRA methods for external initiators where it may not be
23 necessary.

24 Mr. Beckjord has identified an external event
25 steering group headed up by Larry Shao of NRR. This group has

1 been put together and charged with coming up with a
2 recommendation on how best to treat the external events in the
3 context of the severe accident policy, to ensure that the
4 recommended treatment is coordinated with other agency programs
5 related to external events and there is no duplication of
6 effort on the part of the industry, and they are to complete
7 their task within approximately 18 months, and I would think a
8 couple of months have already gone by since they initiated this
9 charter, so we should have something within a year or so.

10 COMMISSIONER CARR: Just on that, are all the members
11 of that steering group NRC people, or are there any outsiders?

12 MR. BECKJORD: Those are NRC.

13 MR. SHERON: Yes. And we use technical assistants,
14 consultants for specialized --

15 COMMISSIONER CARR: But that group itself is NRC.

16 MR. SHERON: Yes.

17 CHAIRMAN ZECH: All right. Let's proceed.

18 [Slide.]

19 MR. SHERON: Okay. On Slide 14, I'll discuss the
20 role of accident management in the IPE letter.

21 First off, let me just define accident management as
22 a process in which actions that can prevent core damage or
23 mitigate the consequences of a severe accident are identified,
24 evaluated, incorporated into a structured program, and
25 implemented at a plant site and are available both to the

1 operators and plant management in the event of an accident.

2 Accident management encompasses not just procedures,
3 but rather hardware, human and organizational factors.

4 What we're really looking for is something that
5 provides the decision-makers at a plant a structured program
6 for managing accidents, including severe accidents.

7 The Staff is right now not requiring that as part of
8 the IPE each plant develop an accident management program, but
9 in fact, we have initiated discussions with NUMARC to discuss
10 the scope and schedule for developing a severe accident
11 management program. I think we're scheduled to have our first
12 meeting with their committee in September, and also around that
13 same time you should be receiving a paper from the Staff
14 defining the Staff's program for accident management.

15 [Slide.]

16 If you look on page 15, you will see that there are -
17 - basically we've tried to characterize accident management in
18 the context of risk management, and you can see the first is
19 the reliability management, which really stresses the reliable
20 operation of the plant, making sure that things don't go wrong.

21 The next step is that given that things may go wrong
22 despite all of your efforts to make the plant operate reliably,
23 we want to make sure that we can handle and manage the plant to
24 mitigate the consequences and minimize any of the consequences.

25 And then the last step obviously is that if your

1 efforts there fail, and for some reason there is a release of
2 fission products, that we make sure that we have a proper
3 emergency management program. And as you know, there are
4 regulations which now require emergency management at each
5 plant.

6 [Slide.]

7 On page 16, you'll see that the generic letter
8 addresses accident management in the following manner. What it
9 does is, it tells the utilities that somewhere down the road
10 they are ultimately going to be requested to develop a
11 structured, comprehensive accident management program for
12 preventing or mitigating the risk from important severe
13 accidents. Their IPE is going to be a key element in
14 developing the information that will be needed to formulate
15 this accident management program, and they need to keep that in
16 mind as they perform the IPE.

17 While the formal accident management program is
18 either under development at the plant, however, we recognize
19 that when they conduct their IPEs, they may, in fact, find
20 areas of procedural -- where procedures may improve the
21 response of the plant to a severe accident. We are encouraging
22 them at this time not to wait until the formal structured
23 program is in place, but any improvements that they see that
24 come from their IPE should be implemented very quickly. They
25 can incorporate these later into a more structured program.

1 COMMISSIONER CARR: If I just may comment here.

2 CHAIRMAN ZECH: Go ahead.

3 COMMISSIONER CARR: The little statement on the slide
4 with respect to that doesn't make it clear that those measures
5 that they're identifying are an outcome of the IPE work itself.
6 I mean, that could -- one could interpret that statement to
7 mean that they just do that at the same time, but not
8 necessarily as a consequence of the IPE, and I think that
9 should be very clear, that if that's what you envision, that as
10 a result of the ongoing IPE work, that then measures may be
11 identified, and then they should be put in place on a rolling
12 basis, I suspect is what you're saying, but not necessarily
13 that this is an activity that is going on concurrent with the
14 IPE and not necessarily connected to it.

15 MR. SHERON: Okay. We can make that clearer.

16 Again, we would point out to the utilities that any
17 change that they make to the plant, whether it's as a result of
18 the IPE, would have to be assessed against the criteria of 10
19 CFR 50.59, and if appropriate, then submit it for review by the
20 Staff.

21 CHAIRMAN ZECH: It's nice to see there you're
22 emphasizing prevention as well as mitigation. I hope we're not
23 losing sight of the fact that prevention is awfully important.

24 MR. SHERON: Yes.

25 CHAIRMAN ZECH: And so I know it's mentioned there a

1 couple times, but during this whole program, I hope that
2 prevention is being given the priority that I think most of us
3 believe it should have.

4 MR. SHERON: Yes, sir, it is.

5 CHAIRMAN ZECH: Okay. Let's proceed.

6 [Slide.]

7 MR. SHERON: On page 17, I'll discuss the
8 relationship of the USIs and the GSIs in the context of the
9 IPE.

10 First off, USI A-45, which is decay heat removal
11 requirements, this is a program that we've been working on
12 since 1981. We have done six limited-scope PRAs on six
13 separate plants, and what we have found from those limited-
14 scope PRAs is that decay heat removal function failures are
15 very plant-specific and would require a systematic examination
16 of a plant if one were to really want to find out where the
17 vulnerabilities are in decay heat removal.

18 What that really means is that there is no generic
19 fix really to decay heat removal that is cost-effective. So
20 what we are doing is, we are proposing that the resolution of
21 A-45 would be to subsume that USI into the IPE process.

22 Another way to put this is that if we were
23 identifying decay heat removal as a potential USI today and we
24 put it through our prioritization process, the prioritization
25 process itself would conclude that there was an ongoing program

1 that was already covering this issue, and therefore we would
2 not need to create a new issue.

3 What we are doing is that the generic letter has
4 included an appendix, Appendix 5 I believe it is, which ensures
5 that the -- it provides the insights, I should say, that we
6 learned from the six limited-scope PRAs, and we're passing that
7 information on to the industry, and the letter itself asks that
8 the IPE that is conducted ensure that the vulnerable aspects of
9 the decay heat removal function are specifically identified.

10 For the other USIs and GSIs, what we have said in the
11 generic letter is that we have told the industry that if in the
12 course of doing their IPE, that they identify any
13 vulnerabilities that are associated with the USI or the GSI,
14 and if they propose, for example, a modification or improvement
15 to the plant that they feel satisfies the issue, that by all
16 means they should come to the Staff and identify that
17 improvement as their proposed resolution to that USI or GSI.
18 We would review it, and if we found it acceptable, we would
19 consider the issue closed for that plant.

20 Likewise, if an IPE shows that a plant does not have
21 a vulnerability with regard to an existing USI or GSI, and they
22 came forward and told us that, and they said, you know, we've
23 looked at our plant; we've compared it against this USI or GSI,
24 and we don't have a vulnerability. There is no safety issue
25 here. They could also submit that, and if we agreed, we would

1 again close the issue for that plant.

2 So we are encouraging the industry to look at the
3 USIs and GSIs as they go through their IPE, and if they see
4 areas where they can close them out, by all means come in and
5 tell us about it. However, we are not at this time requiring
6 that each plant go through these USIs and GSIs and they must
7 resolve them as part of the IPE.

8 [Slide.]

9 On Slide 18, these are the ACRS letter comments that
10 were in the letter dated May 10th. Again the ACRS -- as you
11 know, the ACRS recommended that we broaden the scope of the IPE
12 and require each licensee to conduct a Level II PRA and to
13 subsume all outstanding safety issues, the USIs and GSIs.

14 They also recommended, as you know, treatment of both
15 internal and external initiators. We've looked at these. We
16 have not given any -- we have not disregarded the ACRS
17 comments. We've taken them to heart. We've studied them.
18 We've discussed it with them at a number of meetings. We share
19 their views that a program that integrates a number of ongoing
20 regulatory activities is indeed a desirable one.

21 However, when we look at proceeding in a manner
22 recommended by the ACRS, what we saw is the following. One is
23 that we would incur a substantial delay in implementing the
24 IPE. We also found that there are a number of USIs and GSIs
25 that are just not amenable to resolution by an IPE process, in

1 particular issues which involve primary boundary integrity.

2 And also, many issues are already resolved or very
3 near resolution, and we can resolve them and close them out
4 within the next two years. We can resolve most of the issues,
5 whereas the IPE process may not really yield results until
6 three years down the road or so.

7 And again, if proceeded to examine plants for the
8 vulnerabilities for a full spectrum of external initiators,
9 this, in fact, might not be necessary, as indicated earlier.

10 CHAIRMAN ZECH: The IPE would result in not resolving
11 them for three years or for the PRA? I don't understand your
12 comment.

13 MR. SHERON: The schedule shows that the IPE would
14 take upwards of three years to complete for all the plants.
15 And given that they will probably -- if the Commission approves
16 the issuance of a letter -- would not initiate IPEs for about
17 six more months.

18 We think that the IPE submittals would not have to be
19 submitted to the Staff for about a period of three years,
20 whereas most of the USIs and generic issues already have
21 resolutions identified and are scheduled for completion within
22 two years. So we will have these issues resolved quicker than
23 they could be resolved through the IPE process.

24 CHAIRMAN ZECH: Well, I'm just trying to get a figure
25 on the timetable that we're talking about.

1 Mr. Stello, you were saying that you were concerned
2 that it's going to take a long time. It sounds to me like IPE
3 is going to take a long time.

4 MR. STELLO: It is. But if we had to wait until we
5 had all of the issues laid out as the ACRS would have us lay it
6 out for all USIs, what their resolutions might be --

7 CHAIRMAN ZECH: It would take longer.

8 MR. STELLO: Have all that done, how we're going to
9 do external events, which you've heard is probably on the order
10 of 18 months, have all that laid out, fit it into an integrated
11 program before we were able to even begin, then you are going
12 to delay getting anything done for several more years.

13 CHAIRMAN ZECH: It will take longer. Yours is going
14 to take three years, and theirs --

15 MR. STELLO: And if we did what the ACRS would
16 suggest, it would take even longer. It would take several
17 years.

18 CHAIRMAN ZECH: Okay. That's what I'm trying to find
19 out.

20 Thank you. Proceed, please.

21 [Slide.]

22 MR. SHERON: Okay. On the next page, as Mr. Beckjord
23 said before, IPEMS can be extended to a PRA with some
24 additional effort. The generic letter does not discourage and,
25 in fact, encourages utilities to perform PRAs and where

1 appropriate, we may allow more time for utilities who elect to
2 perform a PRA.

3 We also encourage the resolution of USIs and GSIs
4 through the IPE program, and utilities -- in the letter,
5 utilities are advised that they will be expected to examine and
6 identify vulnerabilities to severe accidents due to externally
7 initiated events. Integration of ongoing activities must be
8 done to preclude any duplication of efforts, and I think also
9 to make sure that we don't waste their limited resources.

10 [Slide.]

11 I'd like to go back to Slide 18 for a second. I
12 missed a bullet on the bottom page, and I think this is also
13 very critical here, and that is that the IDCOR IPEMs, the
14 industry method that was developed by the industry in response
15 to the 1985 severe accident policy, were found to satisfy the
16 intent of the policy statement, and I would point out that we
17 don't believe right now there's a basis for not allowing the
18 use of these IDCOR IPEMs.

19 MR. STELLO: I think there's an element of fairness,
20 too. We have led the industry to believe that they are to put
21 together the IDCOR program, develop this methodology as a
22 vehicle for the resolution of this issue, and I think it
23 creates a climate of regulatory instability where you work on
24 something for three years, and then we change our course of
25 action. It makes it very, very difficult for the industry then

1 to respond and especially respond with enthusiasm. They have
2 put, I think, substantial resources into this program in the
3 belief that this was what was wanted, and this is clearly what
4 was told to them in '85.

5 CHAIRMAN ZECH: Well, I agree. I think the industry
6 effort on the IDCOR program has been a commendable one, and I
7 certainly think that has to be considered very carefully. I
8 think they have done an excellent job in that regard.

9 All right. Let's proceed.

10 [Slide.]

11 MR. SHERON: Okay. On page 20, the results review.
12 What are we going to do with the IPEs once they come in, once
13 they're submitted by the industry?

14 First off, what the Staff is doing right now is
15 preparing a review document which would be used for both the
16 utilities and for the Staff and our contractor reviewers, which
17 would identify the areas of review, determination of adequacy
18 of IPE results, action levels, interpretation of the results,
19 some sample evaluations.

20 What we intend to do is to make this review document
21 available to all utilities shortly after the generic letter is
22 issued. Once the utilities have received the generic letter
23 and this review document, we propose to conduct workshops on
24 the letter and the review document with the utilities. These
25 workshops would be for the purpose of soliciting any comments,

1 questions, concerns they have and to make sure that what
2 they're doing and what they submit will, in fact, meet the
3 basic intent of the Commission's severe accident policy.

4 Once we have received all of these comments from the
5 industry, from these workshops, we would then proceed to revise
6 the review document as necessary and ~~re-issue~~ it to the industry
7 as a final. We would then propose that the utilities would
8 have 60 days from the issuance of that final review document to
9 submit their plans for performing the IPES.

10 [Slide.]

11 On page 21 --

12 COMMISSIONER CARR: Can I interrupt there?

13 MR. SHERON: Yes, sir.

14 COMMISSIONER CARR: Where did we get to at the end of
15 that 60 days? I mean, what timeframe am I talking about,
16 assuming we go ahead and approve the issuance of the letter?

17 MR. SHERON: Are you referring just to the schedule
18 or --

19 COMMISSIONER CARR: Yes, kind of. I can't follow how
20 long all that is going to take.

21 MR. STELLO: Do you want it in chronological time?

22 COMMISSIONER CARR: Yes.

23 MR. SHERON: On page 24 of the handout, you'll see
24 the milestones, and if you want, I can talk about it at that
25 time, or if you want to

1 COMMISSIONER CARR: Well, that initial utility
2 response is the same as the plan at the end of the 60 days?

3 MR. SHERON: Yes.

4 MR. STELLO: January 1989 -- he's asking a question -
5 - January 1989, when the 60 days are up?

6 COMMISSIONER CARR: Yes.

7 MR. SHERON: That's the end of the 60 days.

8 COMMISSIONER CARR: Yes. I'm trying to tie those
9 together.

10 MR. SPIES: Yes.

11 MR. SHERON: There are 109 licensed plants right now.
12 If we consider the replicate plants that exist, we think this
13 would reduce the number of IPE submittals to about 80. We have
14 estimated about six person-months per plant review time; this
15 is Staff review of the submittals, including review of any
16 proposed modifications that a utility might make.

17 We also estimate that IPEs are estimated to be
18 submitted over a period of three years. Some plants will have
19 PRAs already completed. They may need to just update them or
20 give them a review by their staff and submit them very early.
21 Others may have to start from the beginning and may take a full
22 three years.

23 The Office of Research will have the lead in
24 conducting the reviews. We've estimated approximately 16
25 person-years of effort per year will be required for these

1 reviews. We expect to get this from eight contractors, which
2 we estimate will cost us \$1.4 million a year and eight staff
3 members. We would get four from NRR and four from the Office
4 of Research. The thought is that the people that are assigned
5 would probably be rotated on these reviews -- in other words,
6 to spend a year on these review teams and then rotate off and
7 have another staff member come in. So at the end of the time,
8 you would have a substantial number of staff that have been
9 trained and understand the IPEs.

10 Now what happens when we review these and we look at
11 what a utility proposes to fix or more importantly perhaps
12 proposes not to fix on their plant or to improve?

13 First off, the Staff would probably request a meeting
14 with the utility to better understand their analysis and why
15 they drew the conclusion that they did, and then if we still
16 did not agree with the utility's conclusion and the Staff felt
17 that some fix was necessary, some improvement, that would be
18 pursued in accordance with the backfit rule, okay, or perhaps
19 an order. Again, as we said in the integration plan, even if
20 there were items that did not meet the backfit requirements,
21 yet we felt they were important for safety, we would certainly
22 bring them to the Commission.

23 We propose to do the reviews on a team concept. Each
24 plant review will be the responsibility of an NRC team leader.
25 We would have several plant system specialists, a PRA

1 specialist, and obviously consultants to help us in certain
2 areas.

3 [Slide.]

4 On page 22, Staff use of the IPE results. What are
5 we going to do with these?

6 Well, first of all, we're going to review them for
7 the following. First, to ensure that the analysis was
8 adequate, reflects the plant design and operations, and make
9 sure that if we've discovered any particular vulnerabilities to
10 core damage and unusually poor containment performance.

11 For consistency -- I found this very important, and
12 that is that we're going to be receiving 80 IPEs roughly. We
13 want to make sure that plants, say, of the same class, if they
14 find any vulnerabilities, that we have to make sure that they
15 don't exist in other plants as well. So the Staff is going to
16 be sort of a clearinghouse. We're going to be looking at PRAs
17 and IPEMs, industry methods, and if we find a vulnerability in
18 one plant and another utility does not find that same one, I
19 think we're going to have alert them to that kind of
20 vulnerability.

21 We want to make sure that the sequences and the
22 sequence frequencies that are identified by the utilities are,
23 in fact, reasonable, based on our experience on previous PRAs
24 and the IPEM methods.

25 We also want to independently conclude that decisions

1 that utilities make on whether or not to make an improvement
2 are, in fact, justified.

3 We also want to make sure that the USI A-45
4 resolution is adequately justified, and I think finally we want
5 to make sure we can allow the Commission to conclude that their
6 policy has been implemented in a responsible manner by the
7 industry.

8 [Slide.]

9 When we do the reviews, we'll be considering
10 quantitative measures and non-quantitative judgment to
11 determine whether or not a plant is acceptable. Again, we will
12 be evaluating their submittals against this review document.

13 If the NRC considers that the plant design or
14 operation could be enhanced by additional protection beyond the
15 regulations, this again would be in accordance with the backfit
16 rule. However, if we find out that a plant must make a change
17 in order to meet the rules of the Commission, they would be
18 required to make that change without regard to cost, except for
19 whatever alternative they choose to meet the rule or
20 regulation.

21 The IPE results will be used to identify severe
22 accident vulnerabilities generic to a class or several classes
23 of plants, and again this information would be used to
24 determine if there are deficiencies in the regulations. Why
25 did the regulations allow this kind of generic -- you know,

1 deficiency in the plant to happen?

2 If generic deficiencies were identified, the safety
3 goal would be used to determine if regulation modifications
4 were, in fact, needed.

5 [Slide.]

6 And on page 24, you see the important milestones.
7 Very briefly, we would like to issue the letter in August of
8 this year, this month. We propose to get the draft review
9 document out on the street in September. We'd like -- this is
10 a very ambitious schedule -- we'd like to start conducting
11 these workshops in October, get our feedback and revise the
12 document, and reissue by November.

13 We would like to get the utilities' initial responses
14 in January of '89. We would like to receive the lead plant
15 submittals, in this case like the 1150 plants or the plants
16 that have already had an IDCOR method performed on them, in
17 September.

18 We may wish to conduct some additional workshops
19 based on receiving the first submittals, if there are things
20 that we feel should be hashed out with the industry. We may
21 call for some additional workshops.

22 Utilities would hopefully complete all the IPE
23 submittals by January of 1992, and the Staff proposes to
24 complete the review of all submittals by January of 1994.

25 [Slide.]

1 Page 25, our conclusions. I guess the first one is
2 that we need to have developed guidance that enables utilities
3 to perform their IPEs and to gain insights on their plants that
4 could be used to prevent core damage.

5 We want to make sure that we're focusing the
6 utilities' attention on the key events and phenomena affecting
7 the plant and the containment.

8 We are deemphasizing heavy reliance on bottomline
9 numbers. Rather we want to emphasize the identification and
10 the implementation of recovery procedures and the benefits of
11 an accident management program.

12 We are telling the industry that they should not
13 propose to make any major containment modifications until the
14 information associated with generic issues which affect
15 containment have been developed by the Staff, and you heard a
16 briefing just a few weeks ago on the containment improvement
17 program.

18 We also are concluding that we don't see any
19 duplication of efforts by the industry. By subsuming A-45 into
20 the IPE and by separating the treatment of external events at
21 this time, we think that we have very good assurance that we
22 will not be asking the industry to do things twice.

23 And upon approval by the Commission, issuance of the
24 generic letter will accomplish the most critical step in the
25 process of severe accident closure.

1 And that completes my presentation.

2 CHAIRMAN ZECH: All right. Thank you very much.

3 MR. STELLO: And we're through, Mr. Chairman, and as
4 you can tell from the conclusions, our recommendation is that
5 the Commission go forward with the program.

6 CHAIRMAN ZECH: Thank you very much.

7 Are there questions from my fellow Commissioners?
8 Commissioner Roberts?

9 COMMISSIONER ROBERTS: Quick. Are there any known
10 accurate figures for the cost of a Class 1, 2, or 3 PRA, or is
11 that a function of the in-house ability of the utility to have
12 --

13 CHAIRMAN ZECH: Step to the microphone and identify
14 yourself for the reporter, please.

15 MR. MURPHY: J.A. Murphy, Research. I think in
16 today's environment, a Level I PRA would probably cost between
17 \$500-\$750,000. That's without external events. The external
18 events analysis would add probably at least \$200,000 to that.

19 The Level II PRA depends on the level or depth at
20 which it's done. At the level or depth of NUREG-1150, it would
21 be exceedingly expensive. I think it depends on what tools
22 you're using, but I would say that the Level II portion of the
23 PRA would at least double the cost.

24 The Level III part, the calculation and the
25 consequences is relatively cheap after you've done the Level I

1 and Level II, and there you're probably talking only an
2 increment of \$25,000, perhaps less than that.

3 CHAIRMAN ZECH: Thank you very much.

4 COMMISSIONER ROBERTS: Are any of our international
5 friends doing anything similar to this?

6 MR. SPIES: Yes, the Swedes. The Swedish problem
7 involves a plant-specific examination via PRA.

8 CHAIRMAN ZECH: Anybody else? Japan, France,
9 Germany?

10 MR. SPIES: Well, the French, they don't have PRAs,
11 but they are addressing some aspects of severe accidents, you
12 know, for certain events that they consider more probable. So
13 there is a spectrum of things happening. They are not all the
14 same. But most countries are getting into this area, basically
15 preparing for severe accidents, even though the main effort
16 again is prevention, okay. They want to make sure the
17 understanding dealing with severe accidents enters the
18 management, the technical people, the procedures and so on.

19 They are doing it slowly, and it varies, and the
20 Swedes are the ones who have gone farther than anybody else, I
21 guess.

22 COMMISSIONER ROBERTS: Thank you. That's all I have.

23 CHAIRMAN ZECH: Thank you very much. Commissioner
24 Carr?

25 COMMISSIONER CARR: Yes. On the schedule there, do

1 you think anybody will start this before the review document
2 gets out?

3 MR. SHERON: We already have a number of plants that
4 have completed their IPE. As we said, Pennsylvania Power &
5 Light has completed one on Susquehanna.

6 Let's see, I think Commonwealth Edison is starting
7 both PRAs and IPERs, the industry method. There are the five
8 NUREG-1150 plants, which we would encourage to submit the 1150
9 PRAs to the Staff, and there are -- I think there were eight
10 plants that used the IDCOR IPEM method as part of our
11 methodology review process.

12 So there's a fair number of plants, we think, that
13 already have their work done.

14 COMMISSIONER CARR: Then why don't we go ahead and
15 conduct the lead plant review now, if you've already got one
16 done?

17 MR. STELLO: Well, I think that's a good question,
18 and I would urge the five plants that have available the NUREG-
19 1150 to submit those, in fact, as plants for which they would
20 comply.

21 COMMISSIONER CARR: But we aren't planning to start
22 the review until September of '89, it says there.

23 MR. STELLO: That's when we would plan to have the
24 utilities be ready, but that does not preclude the utilities
25 from advancing them, and if they do, we would clearly start.

1 It would be very helpful in developing the document
2 that we're talking about incidentally, but I think -- I think
3 it would be difficult -- probably not productive to require
4 them to do it before the guidance document were ready.

5 COMMISSIONER CARR: My impression is, they won't put
6 it together until we get that review document out.

7 MR. STELLO: Well, as we've already said, there are
8 quite a few of them that have, in fact, done it. I think the
9 NUREG-1150 plants, in my view, have done it.

10 COMMISSIONER CARR: If that is the case, then we
11 should proceed with our work before September, then, because I
12 note --

13 MR. SHERON: I think, Mr. Commissioner, most
14 utilities, you know, they know how to do some of these things.
15 They have been done already. There's guidance. But there are
16 a number of utilities that would like to have a dialogue with
17 us. We're entering into some new areas basically, and I think
18 a dialogue will clarify and sharpen up and make sure that there
19 is a common understanding of what is expected of them and what
20 are we talking when we're talking about the severe accident
21 area with all its attributes. So I think a dialogue, these
22 workshops, will be very helpful.

23 COMMISSIONER CARR: I'm trying to reconcile this with
24 the five-year plan which says you'll do ten of these in FY '89.
25 Is that going to work?

1 MR. STELLO: I think that the answer is, yes, it will
2 work, because I think some of the utilities, the ones we've
3 mentioned already, the five in the NUREG-1150 plants, I think
4 they are going to come in. I think we will have those done and
5 under our belt in '89.

6 COMMISSIONER CARR: Okay. And the external event
7 guidance, you said, will be out in a year?

8 MR. SHERON: Yes. I would say somewhere between
9 twelve and eighteen months, less than eighteen, more than
10 twelve.

11 COMMISSIONER CARR: It's important, in my opinion, to
12 get that out, so that we are sure it doesn't impact anything
13 they're doing on internal events, which is what you said you
14 wanted to do, because until all the guidance is out, they're
15 going to be a little iffy about what they're doing, I would
16 assume.

17 On the ISAP issue, you've got an action up here that
18 we're going to vote on. I would encourage you to put whatever
19 results come out of that vote at least in the generic letter,
20 so we don't leave them hanging out there. Is that your
21 intention?

22 MR. STELLO: Our intent in the generic letter was to
23 say what I read a moment ago, which was to those licensees that
24 are interested in ISAP, we will arrange to combine the IPE and
25 ISAP; however, as Dr. Murley pointed out, to the extent that

1 this gets to be a number of them, it will clearly raise a
2 resource issue, and we'll come back to the Commission with that
3 problem when it happens. That's our intent.

4 COMMISSIONER CARR: Okay. The other question I had
5 was in Appendix 2. It says "the adequacy of the results."
6 This is evaluating the results of the IPE -- "will be decided
7 ultimately by regulatory judgment that will include in addition
8 to the IPE results an assessment of other factors such as plant
9 operational management."

10 I don't see why those are particularly tied together
11 there.

12 IPE is not going to look at the operational
13 management of the plant, is it? I don't know what you mean by
14 that.

15 MR. SHERON: What is meant by that is that if there's
16 a plant out there which for some reason we felt was some sort
17 of poor performance in the area of management or like, and
18 they, in fact, for example, were proposing not to make certain
19 corrections to the plant for whatever reason, we would have to
20 decide whether or not we wanted to go forward and require
21 improvements on that plant. And all we're saying is that their
22 previous history would be one factor in our determination.

23 MR. STELLO: Let me give you a personal reaction to
24 the involvement of management in IPE. If you have management
25 and their maintenance is poor and their equipment reliability

1 is poor and there's a particular piece of equipment that is
2 important with respect to accident prevention, we might be
3 inclined to want to do something about it.

4 COMMISSIONER CARR: Oh, I can understand saying if
5 they did a poor IPE, that would reflect on that management, but
6 when you're saying that you're going to evaluate the IPE, and
7 you're going to include in that an assessment of plant
8 operational management, it leaves me a little iffy. I don't
9 understand what you mean.

10 MR. STELLO: Well, I was trying to give you a
11 specific example. If there's a system and its components, the
12 operations, the management of the plant has been such that they
13 have not maintained the equipment. It's frequently out of
14 service, and it is a particularly important piece of equipment,
15 a decision about whether or not something ought to be backfit
16 or added to the system, you would consider the way the plant
17 has been operated or at least the way that equipment has been
18 operated in making the judgment.

19 I think it's probably a poorly worded sentence, but
20 it was intended to say, when it comes time to make the judgment
21 with respect to a result, you want to reflect on everything.

22 COMMISSIONER CARR: That leads me to think that you
23 might vote in favor of a great operator even if his IPE result
24 didn't look too good as opposed to the same result from a guy
25 who wasn't a very good operator.

1 MR. STELLO: That was not the intent.

2 COMMISSIONER CARR: Well, that's why I think we ought
3 to reword it and maybe figure out what we want to mean there.

4 MR. STELLO: I agree. Let's fix it. That was not
5 what we wanted.

6 COMMISSIONER CARR: It didn't sound like it.

7 On the accident management issue, I would hope that
8 before we jump into that in a big hurry, we do work with NUMARC
9 closely on that.

10 MR. STELLO: We are.

11 COMMISSIONER CARR: Okay.

12 CHAIRMAN ZECH: Commissioner Roberts, you had another
13 question?

14 COMMISSIONER ROBERTS: Are there any plant-specific
15 PRAs that have been completed that have not been shared with
16 the Staff?

17 MR. STELLO: Yes.

18 COMMISSIONER ROBERTS: Why?

19 MR. STELLO: I don't know personally the reason. I
20 gather there's probably a half a dozen or so, I'd guess. I've
21 never asked. They're not required to submit them.

22 COMMISSIONER ROBERTS: I understand that.

23 MR. STELLO: And I suspect that their reaction might
24 be, if they do submit them, we'll probably do something with
25 them, and therefore they don't want to submit them.

1 COMMISSIONER ROBERTS: I surmised that. Thank you.

2 CHAIRMAN ZECH: Commissioner Rogers?

3 COMMISSIONER ROGERS: Just a couple of questions.

4 I wonder if you could help me a little bit to
5 understand what the difference is with the options of how to
6 proceed? What's the difference between a Level 1 PRA plus
7 containment performance analysis consistent with Appendix 1 or
8 a Level 2 PRA? What is the difference between those?

9 MR. SPIES: Level 1 PRAs --

10 COMMISSIONER ROGERS: No, no, because there's a
11 containment performance analysis in there.

12 MR. SPIES: Level 1 PRAs, basically the system
13 analysis that takes you through the challenge to the core,
14 okay, and Level 2 is the containment performance.

15 COMMISSIONER ROGERS: So it's the difference between
16 a Level 1 PRA plus containment performance analysis consistent
17 with Appendix 1.

18 MR. SPIES: Yes, we have an Appendix 1. Appendix 1
19 brings to their attention certain things that deal with
20 containment phenomena that are not in the existing procedures,
21 you know, inside from 1150, the issues of direct containment,
22 heating, and things of that sort that we would have been
23 talking about.

24 Also it stresses that we should be looking at the
25 containment from a recovery standpoint, understand the margins,

1 understand the failure times, and see what can be done instead
2 of stressing bottomline numbers. So it's that type of guidance
3 that's described in Appendix 1. Basically it's an enhancement
4 of Level 2. That's all we're talking about.

5 COMMISSIONER ROGERS: It is an enhancement of Level
6 2?

7 MR. SPIES: Yes, sir; yes.

8 COMMISSIONER ROGERS: Okay.

9 MR. SPIES: It is an enhancement of Level 2. That's
10 all we're talking about.

11 COMMISSIONER ROGERS: It would be an enhancement of
12 Level 2?

13 MR. SPIES: Yes, sir.

14 COMMISSIONER ROGERS: I see.

15 I'm a little doubtful, not that I have any real
16 reason to be able to cite anything, but I'm a little doubtful
17 about the total separation of efforts relating to external and
18 internal events. It just seems to me that there is the
19 possibility of some rework that might be necessary after the
20 external events are considered.

21 Do you envision corrective action based on the
22 internal analysis taking place before the external event
23 analysis is done?

24 MR. STELLO: I would at least think that that's
25 possible. You know, if they identify particular

1 vulnerabilities --

2 COMMISSIONER ROGERS: When you do the internal event,
3 you do a corrective action; you do the external, and you find
4 something that requires additional corrective action, and then
5 it gets in the way of the first corrective action, and you may
6 have to undo something you did before. That's a theoretical
7 possibility.

8 I take it, it's not perceived to be a very big
9 problem, but it would seem to me that the potential is always
10 there for that.

11 MR. STELLO: You could never argue the potential is
12 not there. It's always going to be there. But the approach
13 looks like it has merit for dealing with the external event and
14 seismic margin.

15 COMMISSIONER ROGERS: Is it because you really
16 suspect that the seismic is the big thing in the internal?

17 MR. STELLO: It looks pretty good.

18 COMMISSIONER ROGERS: It seems to me that Level 1
19 things are going to have to do with valves and systems and
20 controls. The seismic margin is going to have to do with
21 beefing up the pipe supports or a support for a water tank or
22 that kind of thing.

23 MR. SHERON: Lastly, if they make a large -- if
24 they're going to make a substantial change to the plant based
25 on the internal initiators, I think the utility is going to

1 have to really examine the external initiator threat before
2 they make a change at that time.

3 COMMISSIONER ROGERS: Get into it, yes.

4 The delay that would be entailed by taking the ACRS-
5 recommended approach, that's a delay in starting the whole
6 process, I take it, from your point of view.

7 MR. STELLO: Oh, yes. Yes. We would have to develop
8 a regulation that would require PRA, for example.

9 COMMISSIONER ROGERS: It's not just that it's going
10 to take longer; it's that you don't do anything for a longer
11 period of time.

12 MR. STELLO: That's correct.

13 COMMISSIONER ROGERS: And therefore you're not
14 deriving any benefits from the early stage work that would
15 occur if you started --

16 MR. STELLO: That's correct.

17 COMMISSIONER ROGERS: It seems to me that's an
18 additional distinction between -- that it just takes longer to
19 complete. You don't get any benefits at all for a starting
20 period if you're waiting to begin longer.

21 And it would seem to me that there may also be some
22 possible other subsidiary problems in waiting. I take it from
23 the NUMARC letter that industry is ready to proceed, which I
24 suspect means that in a sense they're geared up to begin. Some
25 things have already been done, and with a delay of a couple of

1 years, what would be the impact on industry's readiness to
2 begin at that time, in your opinion?

3 MR. STELLO: Well, it depends on what it is that you
4 wound up with after several years. If you decided it had to be
5 full-scope PRA, for example, what they are now ready for is put
6 to the side and going to a full-scope PRA. It would not be
7 used. That readiness would have no purpose.

8 COMMISSIONER ROGERS: Well, what would be the
9 consequences, though? I'm not quite sure what that would imply
10 with respect to the overall safety of the systems out there.

11 MR. BECKJORD: It would mean, Commissioner, that
12 there's a net delay. It's not going to take place as fast as
13 it can, for all the reasons you've pointed out.

14 COMMISSIONER ROGERS: Well, it's a question of people
15 have to do these things. There has to be a certain expertise
16 out there to carry on through. I'd like to just pursue that a
17 little bit, because I'm a little uncomfortable with the notion
18 that the plants will do pretty much using their own people.
19 We'd like to have their own people involved as much as
20 possible. But isn't it true that there is some kind of
21 specialized expertise, certainly in carrying out PRAs, that has
22 to be involved, and that there's that expertise out there now,
23 and if we wait longer, there is some question as to whether
24 that expertise would then go someplace else and not be directed
25 toward the nuclear industry, for example?

1 The nuclear industry is not the only industry that
2 uses PRAs. So it would seem to me that that's something also
3 that should be kept in mind in this thing.

4 MR. MURLEY: Commissioner, I can give a personal
5 view. I think it would -- particularly if we followed their
6 advice to include external events, the methodology for external
7 events is not at all agreed upon, and therefore if we were to
8 follow the ACRS' advice and include that as a requirement now,
9 it could very well stop work that's going on in the industry
10 now, because they would have to wait until the NRC came out
11 with methodology that is acceptable.

12 If while they're waiting, they would probably stop
13 work on the kinds of PRAs that we've been going along with now.
14 I mean, they pretty well know what we're coming out with. It's
15 no secret. But that's not the case for external events, so it
16 could have -- I guess what I'm saying is, it could have a major
17 negative effect.

18 COMMISSIONER ROGERS: A domino effect that one might
19 imagine here in this delay that's not just a simple,
20 straightforward shift in starting date.

21 MR. STELLO: Yes, yes.

22 COMMISSIONER ROGERS: And that's what I'm concerned
23 about.

24 MR. STELLO: Yes. The synergistic effect would even
25 add to that delay. I think that's your point, and I agree with

1 it.

2 COMMISSIONER ROGERS: It's really -- I guess it's a
3 simplistic question, but what would you do if one of the early
4 submissions that showed no problems, no significant problems,
5 and is accepted, what would you do about that if later on
6 towards the tail end of the process of completion of this whole
7 thing, you get a PRA for a similar plant that shows, in fact,
8 there is a problem that didn't turn up --

9 MR. STELLO: We'll go back to the one that we said
10 was not a problem and say, we learned something new, and here
11 it is.

12 MR. BECKJORD: It could be a generic issue.

13 MR. STELLO: Yes. In fact, --

14 COMMISSIONER ROGERS: You're prepared to do that.

15 MR. STELLO: Yes.

16 COMMISSIONER ROGERS: Will that have a negative
17 effect on being first?

18 MR. STELLO: I hope not. I think if I were a utility
19 executive, I'd like to have this behind me, whatever context I
20 could finally put it behind me, and I'll say again, and I said
21 it, I guess, several times, I encourage the utilities involved
22 in the 1150 plants to look at those who use that analysis for
23 which there is no question, that we are intimately familiar
24 with -- it's our analysis -- and submit those and have at it
25 and see how we can get, in fact, to the point where we are --

1 we're done.

2 COMMISSIONER ROGERS: Well, I'm a little concerned
3 about, you know, what so far I see as not much that we have in
4 the way of controlling the flow of these PRAs or IPEs into our
5 Staff, so we can handle them in a programmed way and marshal
6 our resources or direct our resources. I'm a little worried
7 about everything coming in either at the very end or something
8 of that sort.

9 I know that you've said that they're out there, but
10 the fact that they're out there doesn't necessarily mean
11 they're going to be submitted, and if people start to wait to
12 see who else is going to be first and what the consequences
13 are, there could be a real problem with our own ability to deal
14 with those within your schedule, if they all come in at the
15 same time.

16 MR. STELLC: And if that happens, we'll be back to
17 the Commission with some suggested ways to solve that problem.

18 COMMISSIONER ROGERS: But it's already happened then
19 by that time, so --

20 MR. STELLO: Let me ask Commissioner Carr. Do we
21 really honestly believe -- Fiscal Year '89, we could get about
22 ten of them done, and that means we could be talking to some
23 utilities and encouraging them, and I think we're going to be
24 successful, and I think we'll get about ten of them done. But
25 if we don't and it looks like there's that reservation or

1 hesitancy, we won't be bashful to come to the Commission and
2 say, we think it's time to now, if they can't do it themselves,
3 we'll make a list for them and tell them, you're number one and
4 you're number two.

5 COMMISSIONER ROGERS: Would it make any sense to
6 think of any kind of incentives to try to program this in some
7 way.

8 COMMISSIONER CARR: Well, there's obvious incentive
9 to get it in first. You're likely to get it back first, get
10 your work done. But there's also the disincentive, if you get
11 it in first, you've got more people to look at it.

12 MR. SPIES: Commissioner Rogers, we will know the
13 schedule, because we are asking for them to provide the
14 schedule, when they will be coming in, okay. So if we see all
15 of them coming at one point in time, then I guess we'll have to
16 --

17 MR. BECKJORD: Commissioner Rogers, there's also a
18 regulating factor, which is that the contractors who are
19 available to do this work now, I mean, they can perform at a
20 certain rate. So presumably the IPES will be coming in at the
21 rate that the contractors can perform.

22 COMMISSIONER CARR: Yes, but we just started a growth
23 industry.

24 [Laughter.]

25 MR. BECKJORD: Well, it will be a growth industry;

1 that's right.

2 MR. STELLO: We've done that a number of times in the
3 past.

4 COMMISSIONER ROGERS: All right. I think that's
5 pretty much what I had. Thank you very much.

6 CHAIRMAN ZECH: Just a few comments. First of all, I
7 think it's important to remember that when the Commission
8 issued the policy statement on severe accidents three years
9 ago, August of -- almost exactly three years ago -- August of
10 1985, and that was an important step, in my judgment, because
11 for many years we'd been focusing on design-basis accidents,
12 but I think that that was a responsible action on the
13 Commission's part, the agency's part, to focus on severe
14 accidents three years ago, and I might say it was before
15 Chernobyl by less than a year, but before Chernobyl, and the
16 objectives of that severe accident policy were to reduce the
17 probabilities of severe accident, and if a severe accident
18 should occur, to mitigate the consequences to the public.

19 And also at that time, we did say, as I mentioned in
20 my opening remarks, that the Commission concluded that the
21 existing plants posed no undue risk to public health and
22 safety, and there was not an immediate need for generic
23 rulemaking.

24 Now here we are three years later with a generic
25 rulemaking, a generic letter ahead of us, that implements that

1 severe accident policy. It seems to me that the Staff in the
2 past three years has done an outstanding job working with the
3 industry, and I think we should give the industry credit, too,
4 as Mr. Stello has earlier pointed out. The IDCOR group has put
5 a lot of resources and a lot of effort, a lot of energy, and as
6 far as I can understand, to date anyway, a fairly good produce
7 has come forth from that industry effort.

8 So I think that's something that we should recognize.
9 But as much as anything, I think the fact that the utilities
10 and the industry and this agency have focused on severe
11 accidents in the past three years, and again before Chernobyl,
12 has indicated a responsible action on our part.

13 So we have before us now the generic letter, which
14 a culmination of that effort. We've heard the briefing this
15 morning, and this afternoon we've heard the program that the
16 Staff has laid out.

17 I would just like to mention, I certainly think the
18 workshops that you have are important. I would continue your
19 working with the ACRS. We have indeed had different views.
20 You have had different views than the ACRS has had. We respect
21 their views, of course. I'm sure you'll continue to work with
22 the ACRS in the development of the external events which we
23 talked about briefly this morning or this afternoon.

24 I think there are some other issues that we need to
25 continue to work with the NUMARC organization on, simply in

1 developing the framework of strategies for severe accidents.
2 But the effort that has taken place in this past three years,
3 not just on the behalf of this agency, but the behalf of the
4 industry and those in our country that are concerned and
5 involved with nuclear power, I think is a commendable effort to
6 eventually do what we can to prevent severe accidents, and if
7 they do occur, of course, to mitigate them and to protect the
8 public health and safety.

9 So this is a very important effort, I think, and I
10 think to look back and think about what's happened is worth
11 just a few moments of our time this afternoon.

12 So I would ask my colleagues to reflect on the
13 briefing today and to address themselves to the generic letter
14 when they can, and again a thank you to the Staff for an
15 outstanding job, working with your own colleagues on the Staff,
16 but also working with the industry. It's been an effort, I
17 think, that has been productive, and hopefully we can move
18 forward with something that's very useful, and benefits will
19 accrue to the public that we serve.

20 Are there any other comments?

21 [No response.]

22 CHAIRMAN ZECH: If not, we stand adjourned. Thank
23 you very much.

24 [Whereupon, at 3:34 o'clock, p.m., the Commission
25 meeting was adjourned.]

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON INDIVIDUAL PLANT EXAMINATIONS
GENERIC LETTER

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: FRIDAY, AUGUST 5, 1988

were transcribed by me. I further certify that said transcription is accurate and complete, to the best of my ability, and that the transcript is a true and accurate record of the foregoing events.

Marilyn Nations

Ann Riley & Associates, Ltd.

COMMISSION BRIEFING

ON

THE IMPLEMENTATION PLAN OF THE
SEVERE ACCIDENT POLICY STATEMENT

INDIVIDUAL PLANT EXAMINATIONS

THEMIS SPEIS, DEPUTY DIRECTOR
OFFICE OF NUCLEAR REGULATORY RESEARCH

BRIAN SHERON, DIRECTOR
DIVISION OF SYSTEMS RESEARCH
OFFICE OF NUCLEAR REGULATORY RESEARCH

AUGUST 5, 1988

BRIEFING OUTLINE

- 1- SUMMARY
- 2- BACKGROUND
- 3- EXAMINATION PROCESS
- 4- METHODS OF ANALYSIS
- 5- BENEFITS OF PRA
- 6- EXTERNAL EVENTS
- 7- ROLE OF ACCIDENT MANAGEMENT
- 8- RELATIONSHIP TO USIs & GSIs
- 9- COMMENTS ON ACRS LETTER OF 5/10/88
- 10- IPE RESULTS REVIEW
- 11- STAFF USE OF IPE RESULTS
(IMPORTANT MILESTONES)
- 12- CONCLUSIONS

1. SUMMARY

- STAFF HAS DEVELOPED GENERIC LETTER TO INDUSTRY TO IMPLEMENT THE SEVERE ACCIDENT POLICY FOR OPERATING REACTORS
- STAFF REVIEW OF THE IDCOR METHODS FOR CONDUCTING THE INDIVIDUAL PLANT EXAMINATION HAS BEEN COMPLETED
- STAFF HAS INTERACTED FREQUENTLY WITH THE ACRS DURING THE DEVELOPMENT OF THE GENERIC LETTER AND DURING THE STAFF'S REVIEW OF THE IDCOR METHODS
- PROPOSED GENERIC LETTER WAS EXTENSIVELY REVIEWED BY THE CRGR
- THE GENERIC LETTER INCORPORATES SUGGESTIONS MADE BY BOTH THE ACRS AND THE CRGR

SUMMARY (CONT.)

- WE HAVE SPENT SUBSTANTIAL EFFORTS IN DEVELOPING THE GENERIC LETTER AND THE SUPPORTING DOCUMENTS. WE BELIEVE THAT UTILITIES CAN PROCEED TO PERFORM THE IPEs AND TO FURTHER ENHANCE SAFETY WHERE APPROPRIATE
- AT THE MAY 5, 1988 ACRS MEETING, NUMARC STATED THAT INDUSTRY UNDERSTANDS THE OBJECTIVES OF THE IPEs, HAS SUFFICIENT KNOWLEDGE OF THE STAFF'S WORK ON THE IPE, AND URGES THE NRC TO ISSUE THE GENERIC LETTER SO UTILITIES CAN PROCEED TO PERFORM THEIR IPEs
- ON JULY 11, 1988 W. RASIN OF NUMARC SENT LETTER TO W. KERR OF ACRS REITERATING INDUSTRY POSITION THAT THEY ARE READY TO PROCEED ON IPEs AS PROPOSED BY THE STAFF
- WE PLAN TO PERIODICALLY INFORM THE ACRS, CRGR AND THE COMMISSION ON THE PROGRESS OF THIS TASK

INTERACTIONS WITH ACRS

- 2/24/1986 CLASS 9 SUBCOMMITTEE MEETING ON
THE IMPLEMENTATION PROGRAM FOR
SEVERE ACCIDENT POLICY
- 3/14/1986 FULL COMMITTEE MEETING ON
IMPLEMENTATION PROGRAM
- 9/24/1986 CLASS 9 SUBCOMMITTEE MEETING ON
SEVERE ACCIDENT INSIGHTS REPORT AND
THE IDCOR IPEMs
- 12/19/1986 CLASS 9 SUBCOMMITTEE MEETING ON
THE SCOPE OF SYSTEMATIC EXAMINATION
AND IDCOR IPEMs
- 5/28/1987 CLASS 9 SUBCOMMITTEE MEETING ON
GENERIC LETTER PACKAGE TO UTILITIES
- 6/5/1987 FULL COMMITTEE MEETING ON GENERIC
LETTER PACKAGE
- 6/19/1987 ACRS LETTER TO CHAIRMAN ZECH
- 4/26/1988 CLASS 9 SUBCOMMITTEE MEETING ON
REVISED GENERIC LETTER PACKAGE
- 5/5/1988 FULL COMMITTEE MEETING ON REVISED
GENERIC LETTER PACKAGE
- 5/10/1988 ACRS LETTER TO CHAIRMAN ZECH
- 7/13,14/1988 CLASS 9 SUBCOMMITTEE/FULL
COMMITTEE MEETINGS ON INTEGRATION
PLAN FOR CLOSURE OF SEVERE ACCIDENT
ISSUES (SECY-88-147)

2. BACKGROUND

BASIS FOR REQUESTING INDIVIDUAL PLANT EXAMINATIONS IS THE COMMISSION SEVERE ACCIDENT POLICY ISSUED ON AUGUST 8, 1985 (50 FR 32138)

- PLANT SPECIFIC PRAs EXPOSED RELATIVELY UNIQUE VULNERABILITIES TO SEVERE ACCIDENTS WHICH COULD BE REDUCED BY LOW-COST CHANGES VIA PROCEDURES OR MINOR DESIGN MODIFICATIONS
- ANALYSIS WILL BE MADE OF ANY PLANT THAT HAS NOT YET UNDERGONE AN APPROPRIATE EXAMINATION WHEN NRC AND INDUSTRY SUFFICIENTLY PROGRESSED TO DEFINE THE METHODS OF ANALYSIS

BACKGROUND (CONT.)

THE STAFF HAS DEVELOPED INDUSTRY GUIDANCE REGARDING THE APPROACH AND SCOPE OF THE IPEs

THE PURPOSE OF IPE IS FOR UTILITIES TO:

- IDENTIFY/UNDERSTAND THE MOST LIKELY SEVERE ACCIDENT SEQUENCES THAT COULD OCCUR AT THEIR PLANTS
- EVALUATE/IMPLEMENT MEANS FOR IMPROVEMENTS
- DEVELOP AN AWARENESS FOR SEVERE ACCIDENT BEHAVIOR
- DEVELOP AN AWARENESS FOR THE INHERENT MARGINS "BEYOND DESIGN BASIS" AND HOW BEST TO UTILIZE THESE MARGINS TO MANAGE/MITIGATE THE CONSEQUENCES OF A SEVERE ACCIDENT

3. EXAMINATION PROCESS

LICENSEE'S STAFF SHOULD PARTICIPATE IN ALL ASPECTS OF THE IPE SO THAT KNOWLEDGE GAINED BECOMES AN INTEGRAL PART OF OPERATING, TRAINING AND PROCEDURE PROGRAM

LICENSEES SHOULD CONDUCT SYSTEMATIC EXAMINATION OF PLANT DESIGN, OPERATION, MAINTENANCE AND EMERGENCY OPERATION TO:

- IDENTIFY PLANT SPECIFIC VULNERABILITIES (DESIGN AND PROCEDURAL) TO SEVERE ACCIDENTS (FOR BOTH CORE DAMAGE AND CONTAINMENT PERFORMANCE); BOTH INTERNAL AND EXTERNAL INITIATORS ARE TO BE CONSIDERED. EXTERNAL INITIATORS WILL BE CONSIDERED SEPARATE FROM THE IPEs AND ON A LATER SCHEDULE

EXAMINATION PROCESS (CONT.)

- UNDERSTAND THE SEQUENCES THAT CONTRIBUTE THE MOST TO THE TOTAL CORE DAMAGE OR TO POOR CONTAINMENT PERFORMANCE
- UNDERSTAND WHAT COULD PROBABLY GO WRONG IN A PLANT
- IDENTIFY AND EVALUATE MEANS FOR IMPROVING PLANT/CONTAINMENT PERFORMANCE (VIA HARDWARE ADDITIONS/MODIFICATIONS, ADDITION TO PROCEDURES, TRAINING)
- DECIDE WHICH IMPROVEMENTS WILL BE IMPLEMENTED AND SCHEDULE FOR IMPLEMENTATION

4. METHODS OF ANALYSIS

THE GENERIC LETTER SPECIFIES SEVERAL OPTIONS THAT COULD BE USED TO SATISFY THE EXAMINATION REQUIREMENTS

- THE IDCOR INDIVIDUAL PLANT EVALUATION METHODS (IPEMs) FRONT END ONLY WITH STAFF ENHANCEMENTS + CONTAINMENT PERFORMANCE ANALYSIS CONSISTENT WITH APPENDIX 1 OF THE GENERIC LETTER
- LEVEL-I PRA + CONTAINMENT PERFORMANCE ANALYSIS CONSISTENT WITH APPENDIX 1 OR LEVEL-II OR III PRA WITH CONTAINMENT PERFORMANCE CONSISTENT WITH APPENDIX 1
- OTHER SYSTEMATIC EVALUATION METHODS (STAFF REVIEW MIGHT BE NECESSARY)

5. BENEFITS OF PRA

LICENSE RENEWALS

- PRA COULD BE A BASIS TO IDENTIFY RISK-SIGNIFICANT COMPONENTS AND SYSTEMS THAT SHOULD BE MAINTAINED AT AN ACCEPTABLE LEVEL OF RELIABILITY DURING THE LICENSE RENEWAL PERIOD

RISK MANAGEMENT

- RISK MANAGEMENT PROGRAM THAT CONTINUALLY ASSESSES THE SAFETY OF THE PLANT PROVIDES A POWERFUL TOOL TO THE PLANT MANAGEMENT

SUPPORT FOR LICENSING ACTIONS

- PRA MIGHT BE USED TO JUSTIFY TECHNICAL SPECIFICATION CHANGES

INTEGRATED SAFETY ASSESSEMENT PROGRAM

- OPTIMIZES THE TOTAL SAFETY AND EXPEDITES SCHEDULE TO IMPLEMENT FIXES

6. EXTERNAL EVENTS

- COMMISSION SEVERE ACCIDENT POLICY DOES NOT EXCLUDE EXTERNAL EVENTS
- LICENSEES ARE ONLY REQUIRED TO PROCEED WITH THE EXAMINATIONS FOR INTERNAL EVENTS AT THIS TIME
- STAFF IS WORKING WITH NUMARC TO DEVELOP ACCEPTABLE METHODOLOGY
- QUESTION IS HOW TO BEST HANDLE EXTERNAL EVENTS IN SEVERE ACCIDENT POLICY IMPLEMENTATION
- THE STAFF INTENDS TO EFFICIENTLY INTEGRATE ALL ONGOING PROGRAMS DEALING WITH EXTERNAL EVENTS (e.g., A-46 SDMP) SO NO DUPLICATION OF EFFORT BY INDUSTRY WILL OCCUR
- STAFF IS CURRENTLY EXAMINING EXTENT TO WHICH EXTERNAL EVENTS MUST BE TREATED

EXTERNAL EVENTS (CONT.)

- WORK TO DATE INDICATES:
 - SOME EXTERNAL EVENTS SHOULD BE LOOKED AT BY ALL PLANTS
 - SOME EXTERNAL EVENTS ARE UNIQUE ONLY TO A FEW PLANTS
 - SOME EXTERNAL EVENTS MAY BE ACCEPTABLY TREATED BY EXISTING DESIGN BASIS
 - MOST APPROPRIATE WAY TO IDENTIFY EXTERNAL EVENT VULNERABILITIES MAY NOT BE WITH PRA TECHNIQUES (e.g., MARGINS APPROACH)
- NO PARALLEL OVERALL INDUSTRY EFFORTS (i.e., SIMILAR TO THAT FOR INTERNAL EVENTS) YET IN PLACE

EXTERNAL EVENTS (CONT.)

AN EXTERNAL EVENT STEERING GROUP HAS BEEN FORMED TO:

- RECOMMEND HOW BEST TO TREAT EXTERNAL EVENTS IN CONTEXT OF THE SEVERE ACCIDENT POLICY
- ENSURE THAT THE RECOMMENDED TREATMENT IS COORDINATED WITH OTHER AGENCY PROGRAMS RELATED TO EXTERNAL EVENTS AND NO DUPLICATION OF EFFORTS RESULTS
- COMPLETE TASK IN APPROXIMATELY 18 MONTHS

7. ROLE OF ACCIDENT MANAGEMENT

- ACCIDENT MANAGEMENT IS A PROCESS IN WHICH ACTIONS THAT CAN PREVENT CORE DAMAGE OR MITIGATE THE CONSEQUENCES OF A SEVERE ACCIDENT ARE IDENTIFIED, EVALUATED, INCORPORATED INTO A STRUCTURED PROGRAM, IMPLEMENTED AT A PLANT SITE AND ARE AVAILABLE TO THE OPERATORS AND PLANT MANAGEMENT IN THE EVENT OF AN ACCIDENT
- ACCIDENT MANAGEMENT ENCOMPASSES HARDWARE, HUMAN, AND ORGANIZATIONAL FACTORS
- IT PROVIDES DECISION MAKERS AT THE PLANT A STRUCTURED PROGRAM FOR MANAGING ACCIDENTS, INCLUDING SEVERE ACCIDENTS
- STAFF AND NUMARC DISCUSSING SCOPE AND SCHEDULE FOR DEVELOPMENT OF SEVERE ACCIDENT MANAGEMENT PROGRAM

RISK MANAGEMENT

| RELIABILITY MANAGEMENT | | SEVERE ACCIDENT MANAGEMENT | | EMERGENCY MANAGEMENT |
|------------------------------|--|--|--|------------------------------|
| OPERABILITY MANAGEMENT | | PREVENTION OF CORE DAMAGE BY RECOVERY FROM INADEQUATE CORE COOLING | | PROTECTIVE ACTION STRATEGIES |
| PERFORMANCE INDICATORS | | CONTROL OF DAMAGE WITHIN THE PRIMARY COOLANT BOUNDARIES | | |
| NUCLEAR PLANT AGING RESEARCH | | CONTROL OF CONTAINMENT DAMAGE AND RELEASES | | |
| RELIABILITY ASSURANCE | | | | |

ACCIDENT MANAGEMENT (CONT)

- PROPOSED GENERIC LETTER ADDRESSES ACCIDENT MANAGEMENT AS FOLLOWS:
 - UTILITIES ARE EXPECTED TO ULTIMATELY DEVELOP A STRUCTURED, COMPREHENSIVE ACCIDENT MANAGEMENT PROGRAM FOR PREVENTION OR MITIGATION OF RISK IMPORTANT SEVERE ACCIDENTS
 - WHILE A FORMAL ACCIDENT MANAGEMENT PROGRAM MAY BE UNDER DEVELOPMENT WHILE THE IPE'S ARE BEING CONDUCTED, UTILITIES ARE EXPECTED TO IDENTIFY MEASURES THAT PLANT PERSONNEL CAN AND SHOULD TAKE TO PREVENT/MITIGATE RISK IMPORTANT SEVERE ACCIDENTS. ASSESS AGAINST THE CRITERIA OF 10 CFR 50.59 AND IF APPROPRIATE, SUBMIT FOR NRC REVIEW IN ACCORDANCE WITH 10 CFR 50.90

8. RELATIONSHIP TO USIs & GSIs

- USI A-45 ANALYSES HAVE SHOWN THAT DECAY HEAT REMOVAL FUNCTION FAILURES ARE SUFFICIENTLY PLANT SPECIFIC AND WOULD REQUIRE SYSTEMATIC EXAMINATION
- PROPOSED STAFF RESOLUTION OF A-45 IS TO SUBSUME ISSUE INTO IPEs
- THE PROPOSED GENERIC LETTER STATES THAT THE IPE SHOULD ENSURE THAT THE VULNERABLE ASPECTS OF DHR FUNCTION ARE IDENTIFIED
- THE PROPOSED GENERIC LETTER PROVIDES INSIGHTS GAINED FROM SIX LIMITED SCOPE PRAs PERFORMED BY NRC UNDER THE A-45 PROGRAM
- FOR OTHER USIs & GSIs
 - IF IPE IDENTIFIES ANY VULNERABILITIES THAT ARE TYPICALLY ASSOCIATED WITH A USI OR GSI AND UTILITY PROPOSES MEASURES ACCEPTABLE TO THE STAFF TO ELIMINATE OR SUBSTANTIALLY REDUCE THE VULNERABILITY, OR
 - IF IPE SHOWS PLANT HAS NO VULNERABILITY WITH RESPECT TO A USI OR GSI
 - THEN USI OR GSI MAY BE CONSIDERED CLOSED ON A PLANT SPECIFIC BASIS

9. COMMENTS ON ACRS LETTER DATED MAY 10, 1988

- ACRS RECOMMENDED BROADEN SCOPE OF IPE AND REQUIRE EACH LICENSEE TO CONDUCT LEVEL-2 PRA TO SUBSUME ALL OUTSTANDING SAFETY ISSUES (USIs/GSIs)
- ACRS ALSO RECOMMENDED TREATMENT OF BOTH INTERNAL AND EXTERNAL INITIATORS AT THIS TIME
- THE STAFF SHARES ACRS VIEWS THAT A PROGRAM THAT INTEGRATES A NUMBER OF ONGOING REGULATORY ACTIVITIES IS DESIRABLE. HOWEVER, PROCEEDING WITH ACRS APPROACH AT THIS TIME WILL RESULT IN FOLLOWING:
 - SUBSTANTIAL DELAY IN IMPLEMENTING IPE WILL BE INCURRED
 - SOME ISSUES ARE NOT AMENABLE TO RESOLUTION BY IPE AND MANY ISSUES ALREADY RESOLVED
 - PROCEEDING TO EXAMINE PLANTS FOR VULNERABILITIES FOR FULL SPECTRUM OF EXTERNAL EVENTS MIGHT NOT BE NECESSARY AS INDICATED EARLIER UNDER ITEM 6
- IN ADDITION:
 - THE IDCOR IPEMs DEVELOPED BY INDUSTRY IN RESPONSE TO THE 1985 SEVERE ACCIDENT POLICY STATEMENT WERE FOUND (SUBJECT TO STAFF'S ENHANCEMENT) TO SATISFY THE INTENT OF THAT POLICY STATEMENT. WE HAVE NO BASIS FOR NOT ALLOWING USE OF THE IDCOR IPEMs

COMMENTS ON ACRS LETTER (CONT.)

- FURTHERMORE, IPEMs COULD BE EXTENDED TO A PRA
- THE GENERIC LETTER DOES NOT DISCOURAGE, IN FACT ENCOURAGES, UTILITIES TO PERFORM PRAs AND WHERE APPROPRIATE THE STAFF MAY ALLOW MORE TIME FOR UTILITIES WHO ELECT TO PERFORM PRAs
- THE GENERIC LETTER ENCOURAGES RESOLUTION OF USIs/GSIs THROUGH THE IPE PROGRAM
- UTILITIES ARE ADVISED THAT IN THE FUTURE THEY WILL BE EXPECTED TO EXAMINE AND IDENTIFY VULNERABILITIES TO SEVERE ACCIDENTS DUE TO EXTERNALLY INITIATED EVENTS. INTEGRATION OF ONGOING ACTIVITIES INVOLVING EXTERNAL EVENTS MUST BE DONE TO PRECLUDE DUPLICATION OF EFFORTS

10. IPE RESULTS REVIEW

- STAFF WILL PREPARE IPE REVIEW DOCUMENT FOR UTILITIES AND FOR THE STAFF AND CONTRACTOR REVIEWERS TO IDENTIFY:
 - AREAS OF REVIEW
 - DETERMINATION OF ADEQUACY OF IPE RESULTS
 - ACTION LEVELS
 - INTERPRETATION OF THE RESULTS
 - SAMPLE EVALUATIONS
- IPE REVIEW DOCUMENT WILL BE MADE AVAILABLE TO ALL UTILITIES SHORTLY AFTER THE ISSUANCE OF THE GENERIC LETTER
- STAFF WILL CONDUCT WORKSHOPS ON IPE LETTER AND REVIEW DOCUMENT
- COMMENTS RECEIVED ON REVIEW DOCUMENT WILL BE EVALUATED AND, IF NECESSARY, REVISED REVIEW DOCUMENT WILL BE REISSUED
- UTILITIES WILL HAVE 60 DAYS AFTER ISSUANCE OF FINAL REVIEW DOCUMENT TO SUBMIT PLANS FOR PERFORMING THEIR IPEs

IPE RESULTS REVIEW (CONT.)

- THERE ARE 109 LICENSED PLANTS, REPLICATE PLANTS WOULD REDUCE THE IPE SUBMITTALS TO 80
- ESTIMATE 6 PERSON-MONTHS PER PLANT REVIEW OF THE IPE SUBMITTALS INCLUDING REVIEW OF ANY PROPOSED MODIFICATIONS
- IPEs ARE ESTIMATED TO BE SUBMITTED OVER A PERIOD OF 3 YEARS
- RES WILL HAVE THE LEAD, APPROXIMATELY 16 PERSON-YEARS OF EFFORTS PER YEAR:
 - 8 CONTRACTORS AT \$1.4M PER YEAR
 - 8 STAFF(4 FROM NRR & 4 FROM RES)
- IN CASE OF DISAGREEMENT THE STAFF WILL PURSUE FIX IN ACCORDANCE WITH THE BACKFIT RULE OR ORDER
- TEAM CONCEPT- EACH PLANT REVIEW TO BE THE RESPONSIBILITY OF ONE NRC TEAM LEADER, SEVERAL PLANT SYSTEMS SPECIALISTS AND PRA SPECIALIST

11. STAFF USE OF IPE RESULTS

- REVIEW OF IPE RESULTS FOR THE FOLLOWING:
 - TO ENSURE ADEQUATE ANALYSIS OF PLANT DESIGN AND OPERATIONS TO DISCOVER PARTICULAR VULNERABILITY TO CORE DAMAGE AND UNUSUALLY POOR CONTAINMENT PERFORMANCE
 - FOR CONSISTENCY IN THE IDENTIFICATION AND TREATMENT OF LEADING CORE DAMAGE SEQUENCES
 - TO ENSURE THAT SEQUENCES AND SEQUENCE FREQUENCIES ARE REASONABLE
 - TO INDEPENDENTLY CONCLUDE THAT DECISIONS ON WHETHER TO MAKE IMPROVEMENT ARE JUSTIFIED
 - TO ENSURE THAT USI A-45 RESOLUTION IS ADEQUATELY JUSTIFIED
 - TO ALLOW THE COMMISSION TO CONCLUDE THAT THE SEVERE ACCIDENT POLICY HAS BEEN RESPONSIBLY IMPLEMENTED BY INDUSTRY

STAFF USE OF IPE RESULTS (CONT.)

- CONSIDERATIONS WILL INCLUDE BOTH QUANTITATIVE MEASURES AND NON-QUANTITATIVE JUDGEMENT TO DETERMINE WHETHER OR NOT A PLANT IS ACCEPTABLE
- IF NRC CONSIDERATIONS INDICATES THAT PLANT DESIGN OR OPERATION COULD BE ENHANCED BY ADDITIONAL PROTECTION BEYOND NRC REGULATIONS IMPLEMENTATION WOULD BE IN ACCORDANCE WITH 10 CFR 50.109
- IF CONSIDERATIONS INDICATES PLANT DESIGN OR OPERATION MUST BE CHANGED TO MEET NRC REGULATIONS, IMPLEMENTATION WOULD BE WITHOUT REGARD TO COST EXCEPT TO SELECT AMONG ALTERNATIVES
- IPE RESULTS WILL BE USED TO IDENTIFY SEVERE ACCIDENT VULNERABILITIES GENERIC TO A CLASS OR SEVERAL CLASSES OF PLANTS. THIS INFORMATION WILL BE USED TO EXAMINE IF DEFICIENCIES IN THE REGULATIONS EXIST
- IF GENERIC DEFICIENCIES WERE IDENTIFIED, SAFETY GOAL WOULD BE USED TO DETERMINE IF REGULATION MODIFICATION WERE NEEDED

IMPORTANT MILESTONES

| | | |
|--|-----------|------|
| ISSUE THE IPE GENERIC LETTER | AUGUST | 1988 |
| ISSUE A DRAFT IPE REVIEW DOCUMENT | SEPTEMBER | 1988 |
| CONDUCT WORKSHOP(S) | OCTOBER | 1988 |
| REVISE REVIEW DOCUMENT AS NEEDED /CRGR REVIEW AND REISSUE | NOVEMBER | 1988 |
| UTILITIES INITIAL RESPONSES | JANUARY | 1989 |
| LEAD PLANT(S) REVIEW | SEPTEMBER | 1989 |
| ADDITIONAL WORKSHOPS IF NEEDED | TBD | TBD |
| UTILITIES COMPLETE ALL IPE SUBMITTALS | JANUARY | 1992 |
| STAFF COMPLETE REVIEW OF ALL IPE SUBMITTALS | JANUARY | 1994 |

12. CONCLUSIONS

- DEVELOPED GUIDANCE TO ENABLE UTILITIES TO PERFORM THEIR IPEs AND GAIN INSIGHTS ON ALL PLANT SYSTEMS AND COMPONENTS THAT COULD BE USED TO PREVENT CORE DAMAGE ACCIDENTS
- FOCUS UTILITIES' ATTENTION ON THE KEY EVENTS AND PHENOMENA AFFECTING THE PLANT IN GENERAL AND THE CONTAINMENT IN PARTICULAR
- DE-EMPHASIZING HEAVY RELIANCE ON BOTTOM LINE NUMBERS. EMPHASIZING THE IDENTIFICATION AND IMPLEMENTATION OF RECOVERY PROCEDURES AND ACCIDENT MANAGEMENT PROGRAM
- NO MAJOR CONTAINMENT MODIFICATIONS REQUIRED UNTIL THE INFORMATION ASSOCIATED WITH GENERIC ISSUES WHICH AFFECT CONTAINMENT PERFORMANCE HAS BEEN DEVELOPED BY THE STAFF
- NO DUPLICATION OF EFFORTS BY INDUSTRY: SUBSUMING A-15 RESOLUTION IN THE IPE AND SEPARATING TREATMENT OF EXTERNAL EVENTS AT THIS TIME
- UPON APPROVAL BY COMMISSION, ISSUANCE OF THIS GENERIC LETTER WILL ACCOMPLISH THE MOST CRITICAL STEP IN THE PROCESS OF SEVERE ACCIDENT CLOSURE